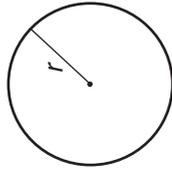


# Geometry Reference Sheet

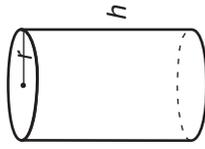
(To be used with Sections 1 and 2)

## Circle



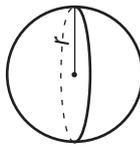
Area =  $\pi r^2$   
 Circumference =  $2\pi r$   
 Circumference =  $\pi d$

## Cylinder



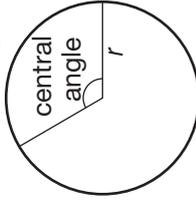
Volume =  $\pi r^2 h$   
 Surface Area =  $2\pi r^2 + 2\pi r h$

## Sphere



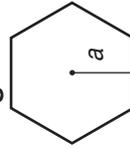
Volume =  $\frac{4}{3}\pi r^3$   
 Surface Area =  $4\pi r^2$

## Sector of Circle



Arc Length =  $\frac{\text{circumference} \times \text{central angle}}{360^\circ}$   
 Sector Area =  $\frac{\text{total area} \times \text{central angle}}{360^\circ}$

## Regular Polygon



Area =  $\frac{1}{2}$  perimeter • apothem

## Formulas

**DISTANCE BETWEEN TWO POINTS:**  
 $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

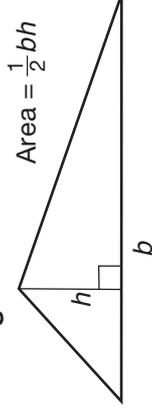
**MID-POINT BETWEEN TWO POINTS:**  
 $\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

**SLOPE:**  
 $m = \frac{y_2 - y_1}{x_2 - x_1}$

**SLOPE-INTERCEPT FORM:**  
 $y = mx + b$

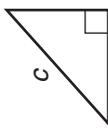
**POINT-SLOPE FORM:**  
 $y - y_1 = m(x - x_1)$

## Triangle



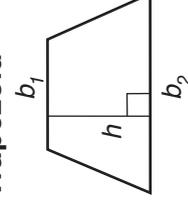
Area =  $\frac{1}{2}bh$

## Pythagorean Theorem



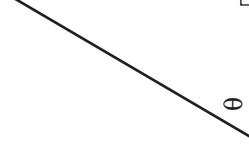
$a^2 + b^2 = c^2$

## Trapezoid



Area =  $\frac{1}{2}h(b_1 + b_2)$

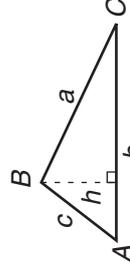
## Trigonometry Formulas



$\sin \theta = \frac{\text{side opposite}}{\text{hypotenuse}}$

$\cos \theta = \frac{\text{side adjacent}}{\text{hypotenuse}}$

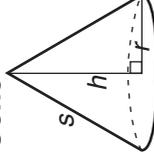
$\tan \theta = \frac{\text{side opposite}}{\text{side adjacent}}$



Law of sines:  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Law of cosines:  $b^2 = a^2 + c^2 - 2ac(\cos B)$

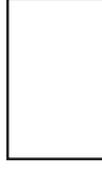
## Cone



Volume =  $\frac{1}{3}\pi r^2 h$

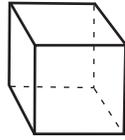
Surface Area =  $\pi r^2 + \pi r s$

## Rectangle



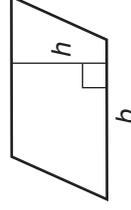
Area =  $lw$   
 Perimeter =  $2l + 2w$

## Cube



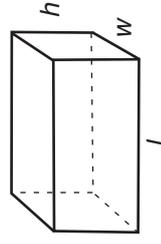
Volume =  $s^3$   
 Surface Area =  $6s^2$

## Parallelogram



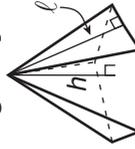
Area =  $bh$

## Rectangular Prism



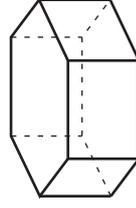
Volume =  $lwh$   
 Surface Area =  $2wl + 2lh + 2wh$

## Right Pyramid



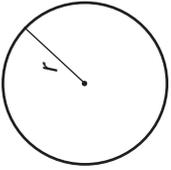
Volume =  $\frac{1}{3} \times \text{base area} \times h$   
 Surface Area = base area + face areas

## Right Prism



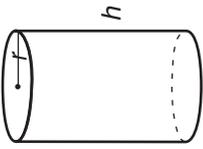
Volume = base area  $\times h$   
 Surface Area = base areas + face areas

## Círculo



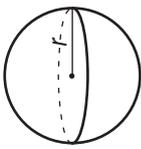
$\text{Área} = \pi r^2$   
 $\text{Circunferencia} = 2\pi r$   
 $\text{Circunferencia} = \pi d$

## Cilindro



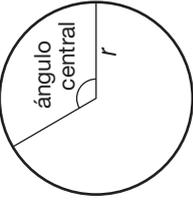
$\text{Volumen} = \pi r^2 h$   
 $\text{Área de superficie} = 2\pi r^2 + 2\pi r h$

## Esfera



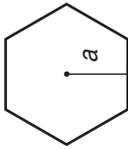
$\text{Volumen} = \frac{4}{3} \pi r^3$   
 $\text{Área de superficie} = 4\pi r^2$

## Sector del círculo



$\text{Largo del arco} = \frac{\text{circunferencia} \times \text{ángulo central}}{360^\circ}$   
 $\text{Área del sector} = \frac{\text{área total} \times \text{ángulo central}}{360^\circ}$

## Polígono regular



$\text{Área} = \frac{1}{2} \text{perímetro} \cdot \text{apotema}$

## Fórmulas

**DISTANCIA ENTRE DOS PUNTOS:**

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

**PUNTO MEDIO ENTRE DOS PUNTOS:**

$$\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

**PENDIENTE:**

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

**FÓRMULA DE INTERSECCIÓN EN PENDIENTE:**

$$y = mx + b$$

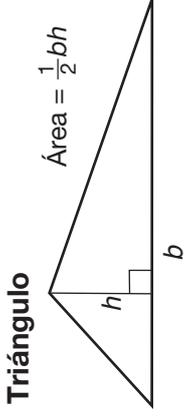
**FÓRMULA DE PUNTO EN UNA PENDIENTE:**

$$y - y_1 = m(x - x_1)$$

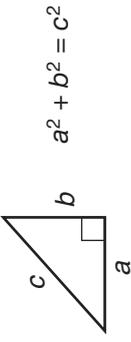
# Geometría

## Hoja de referencia

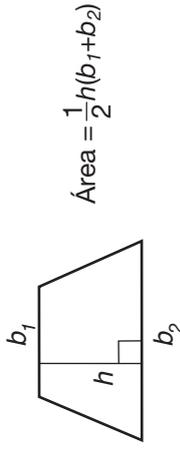
(Para uso con las secciones 1 y 2)



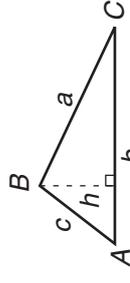
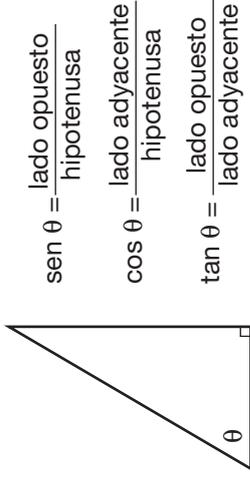
## Teorema de Pitágoras



## Trapezio



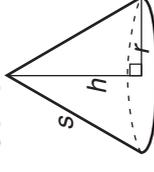
## Fórmulas de trigonometría



**Ley del seno:**  $\frac{a}{\text{sen } A} = \frac{b}{\text{sen } B} = \frac{c}{\text{sen } C}$

**Ley del coseno:**  $b^2 = a^2 + c^2 - 2ac(\text{cos } B)$

## Cono



$\text{Volumen} = \frac{1}{3} \pi r^2 h$

$\text{Área de superficie} = \pi r^2 + \pi r s$

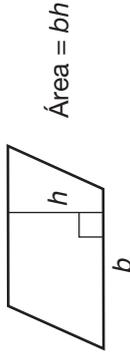
## Rectángulo



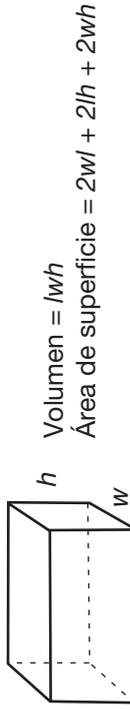
## Cubo



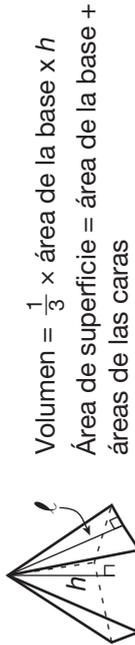
## Paralelogramo



## Prisma rectangular



## Pirámide recta



## Prisma recto

